UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze Psicologiche, Pedagogiche, dell'Esercizio Fisico e della Formazione
ACADEMIC YEAR	2017/2018
MASTER'S DEGREE (MSC)	CLINICAL PSYCHOLOGY
SUBJECT	COGNITIVE NEUROSCIENCES
TYPE OF EDUCATIONAL ACTIVITY	B
AMBIT	50474-Psicologia generale e fisiologica
CODE	13225
SCIENTIFIC SECTOR(S)	M-PSI/02
HEAD PROFESSOR(S)	OLIVERI MASSIMILIANO Professore Ordinario Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	6
INDIVIDUAL STUDY (Hrs)	110
COURSE ACTIVITY (Hrs)	40
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	1
TERM (SEMESTER)	1° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	**OLIVERI MASSIMILIANO** Friday 10:00 12:00 Stanza TEAMS con codice alx3rxb

DOCENTE: Prof. MASSIMILIANO OLIVERI

PREREQUISITES	Knowledge of physiological psychology, in particular of functional neuroanatomy. Basic notions of chemistry, physics, mathematics.
LEARNING OUTCOMES	Students will acquire knowledge and skills necessary for both basic and applied research in the fields of psychology and medicine, with particular reference to training in the neuropsychological, neuroimaging and brain stimulation fields of study, as well as in diagnosis of cognitive disorders. The objectives are part of the general objectives of the course, aimed at forming specific competencies for clinical psychology.
ASSESSMENT METHODS	Preliminary test with 30 questions on the following topics: methods of cognitive neuroscience, hemispheric specialization, object recognition, motor system, cellular mechanisms of memory. The test will be evaluated by assigning 1 point to each correct response. Final oral examination, with 3 questions concerning of the topics for those students who will not have executed the preminary test. For students who will have executed preliminary test, the topics of oral examination will be the following ones: emotions, language, executive functions, social cognition, consciousness. The score of the preliminary test will be averaged with that of oral examination (50% preliminary test; 50% oral examination). Preliminary test will be performed during the week selected for preliminary examinations.
EDUCATIONAL OBJECTIVES	Advanced knowledge of principles and methods of cognitive neuroscience, finalized to basic research as well to diagnosis and rehabilitation programs. Ability to select and read scientific literature on cognitive neuroscience, and to correlate cognitive functions with neural substrates. These objectives contribute to one of the general objectives of the course, i.e. to increase knowledge on both basic and applied neuroscientific research. Moreover, these objectives are preliminar to the development of professional ability to make neuropsychological evaluations and diagnoses.
TEACHING METHODS	frontal lessons, experimental training in lab.
SUGGESTED BIBLIOGRAPHY	Gazzaniga et al. Neuroscienze Cognitive. Zanichelli.

SYLLABUS

Hrs	Frontal teaching
3	Methods of cognitive neuroscience
2	Object recognition: what and where pathways; computational problems in object recognition; face perception
4	Motor system and control of action: neuronatomy of motor systems; computational aspects of motor control; physiology of motor pathways; goals selection and action programs; basal ganglia; mirror neurons; learning of new abilities
4	Attention: attentional models; neural mechanisms of attention and selective perception; attentional networks
3	Neural bases of memory: anatomy of memory; mechanisms of memory; memory system of the mesial temporal lobe; memory consolidation; cellular bases of learning and memory.
3	Emotions: neural correlates of emotions: theories of emotions; amygdala; interactions between emotions and other cognitive processes; cognitive control of emotions; disgust, happiness, love.
4	The language: anatomy of language; brain correlates of language; language comprehension: neural models of language comprehension; neural models of language production; evolution of language.
4	Executive functions and decision making: anatomy of cognitive control; goal oriented behaviors; decisional processes; goal planning; control of efficacy of goal oriented behavior.

Hrs	Practice
2	Hemispheric specialization
2	Measures of cortical excitability
4	Neuromodulation

Hrs	Workshops
5	Lab training on non invasive brain stimulation